

REMARKS

Reconsideration of the application is respectfully requested. Claims 1 and 2 have been amended. New claim 20 has been added. Claims 6-19 have been withdrawn from consideration. Thus, only claims 1, 2, 4, 5, and 20 are currently at issue.

Claims 1 and 2 have been amended to clarify that the foaming plane comprises a group of adjacent foaming cells. Support for this amendment is found in the specification at, e.g., page 7 (first paragraph), page 9 (last paragraph), and in Figures 1 and 2. Support for new claim 20 is found in the specification at, e.g., page 10 (third paragraph) to page 13 (last paragraph). No new matter has been added.

Anticipation/Obviousness Rejections

Claims 1, 2, 4, and 5 have been rejected under 35 U.S.C. §102(b) as anticipated by, or alternatively under 35 U.S.C. §103(a) as obvious over, Japanese Patent Application No. JP 2000-177039 ("JP '039"). The Examiner cites JP '039 as disclosing a polyethylene film contiguously applied to a base paper, and laminated over a joining inhibitor spot-applied to the paper, using heat to form a foam and vacuum suction to obtain a foamed laminated sheet.

The rejection is traversed, and reconsideration is respectfully requested.

Claims 1, 2, 4, and 5 are neither anticipated by nor obvious over JP '039 because, *inter alia*: (1) this reference does not disclose or suggest a foamed sheet in which a contiguous synthetic resin film is laminated to the outer surface of the base paper; and (2) this reference does not disclose or suggest a foamed sheet having a group of adjacent foaming cells.

First, in the presently claimed thermal insulation foamed sheet, the outer surface of the base paper is laminated with a contiguous synthetic resin film - i.e., the film is continuously applied to (and thus in constant contact with) the outer surface of the base paper. Contrary to the Examiner's contention, JP '039 does not teach or suggest a film that is contiguously applied to the outer surface of a base paper. Rather, the disclosure and figures in JP '039 clearly show that the laminate film is not in contact with the *outer* surface of the base paper at the locations (i.e., spots) where the joining inhibitor has been applied. For example, JP '039, ¶ 14 states that "the laminate film 13 is not joined to the paper board 10 in the part which applied the silicone oil 11." Similarly, JP '039 Figures 2 and 6 plainly illustrate that the laminate film 13 is not in constant, contiguous contact with the outer surface of the base paper 10. While it is true that a separate laminate film 14 is contiguously applied to the *inner* surface of the JP '039 base paper, this does not negate the fact that JP '039 fails to teach or suggest a laminate film contiguously applied to the *outer* surface of the base paper, as called for in the present claims. In fact, the presence of the critical joining inhibitor taught by JP '039 renders it impossible to form such a contiguous film laminate by covering certain parts of the outer surface of the base paper and thus preventing contact between the paper and the laminate film.

Second, the presently claimed invention comprises a foaming plane having a group of adjacent foaming cells. This adjacency is achieved because the foaming plane is formed from a contiguous synthetic resin film laminated on the outer surface of the base paper. Hence, the presently claimed foamed sheet is characterized in that all the spots where the moisture contained in the base paper is evaporated can be foamed.

In contrast, JP '039 discloses foaming cells that form in a scattered state. More specifically, the JP '039 sheet is configured such that when the moisture contained in the paper is evaporated by

heating, the evaporated moisture intrudes into a gap in a non-adhesive face already formed between the laminate film and the joining inhibitor agent, or air transmitted through the laminate film intrudes into the gap. That is, in the JP '039 structure, when the moisture contained in the paper is evaporated, the evaporated moisture intrudes into the gap where the laminate film is not joined because the joining inhibitor agent was applied, and only the spot where the joining inhibitor agent was applied is foamed. Therefore, in JP '039, the spot where the joining inhibitor agent is not applied can not be foamed, and it is evident that foaming cells can be formed only in a scattered state.

Consequently, the JP '039 laminate film (which only contacts the base paper in certain locations) is expanded by vacuum suctioning to form non-adjacent swollen projections on the foamed sheet. *See JP '039, ¶¶ 16-18 and Figure 6; and Specification at p. 2.* This difference between the claimed invention and the foamed sheet disclosed in JP '039 is readily apparent when Figure 1 of the present application is compared with Figure 6 of JP '039. In the present application, the foaming cells are adjacent (i.e., touching), whereas in JP '039, the foaming cells are separated by valleys due to the intermittent presence of the joining inhibitor, which allows the laminate film to expand upward rather than remain attached to the base paper. Where the joining inhibitor is absent, the laminate film does not expand. Thus, the foaming cells in JP '039 are not adjacent.

Furthermore, in the presently claimed invention, foaming is carried out by both heating (which causes moisture evaporation) and vacuum suctioning before the heating temperature drops - i.e., immediately after the heating or during heating. By this arrangement, a foaming rate can be further increased beyond what is achieved by foaming through heating only (as disclosed in JP '039). Specifically, the vacuum suctioning can extend the foaming height to a certain level by

suctioning until direct contact with an adsorption face of a die is reached by uniform vacuum suctioning. Consequently, the foaming cell height can be increased to approximately 20 times the film thickness (i.e., achieving an expansion ratio of about 20), as called for in claim 20.

In view of the foregoing, the pending claims are neither anticipated by nor obvious over JP '039 because this reference fails to teach or suggest all of the features recited in these claims. *See, e.g.*, MPEP §2143.03 (to establish obviousness, "all the claim limitations must be taught or suggested by the prior art"). Thus, Applicant respectfully requests that this rejection be withdrawn.

Conclusion

In view of the above amendments and remarks, it is respectfully requested that the application be reconsidered and that all pending claims be allowed and the case passed to issue.

If there are any other issues remaining, which the Examiner believes could be resolved through either a Supplemental Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned at the telephone number indicated below.

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Respectfully submitted,

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